



SERIAL NUMBER: 09/000,824  
ATTORNEY DOCKET NO.: 41980.002004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

*In re* Application of : )

Amarasekera, et al. )

Serial No.: 09/000,824 )

Filed: December 30, 1997 )

For: SILICONE COMPOSITIONS FOR HIGH  
VOLTAGE INSULATOR APPLICATIONS )

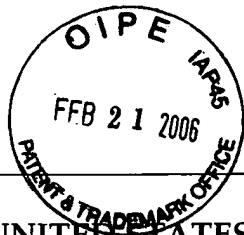
Examiner: C. Caixia Lu, Ph.D.

Group Art Unit: 1713

Confirmation No. 5842

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**REPLY BRIEF TO EXAMINER'S ANSWER**



SERIAL NUMBER: 09/000,824  
ATTORNEY DOCKET NO.: 41980.002004

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES**

<i>In re</i> Application of :	)	
	)	
Amarasekera, et al.	)	Examiner: C. Caixia Lu, Ph.D.
	)	
Serial No.: 09/000,824	)	Group Art Unit: 1713
	)	
Filed: December 30, 1997	)	Confirmation No. 5842
	)	
For: SILICONE COMPOSITIONS FOR HIGH VOLTAGE INSULATOR APPLICATIONS	)	

Mail Stop Appeal Brief  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

**REPLY TO EXAMINER'S ANSWER**

Appellants' Reply to Examiner's Answer in connection with the above-captioned patent application is submitted herewith. A Notice of Appeal was filed on June 1, 2005. This reply brief is believed to fully satisfy all of the requirements of 37 C.F.R. § 41.41. Specifically, this reply brief does not include any new or non-admitted amendment, or any new or non-admitted affidavit or other evidence.

It is believed that no payment is currently owed by Appellant; however, in the event of any deficiency or overpayment, the Commissioner is hereby authorized to

charge or credit the undersigned's Deposit Account No. 50-0206 any amount necessary to comply with the Rules.

In response to the Office Action dated December 1, 2004, finally rejecting pending claims 1-17, 19-24, and 33, Appellants respectfully request that the Board of Patent Appeals and Interferences reconsider and withdraw the rejections of record, and allow the pending claims, which are attached hereto as the Claims Appendix.

**I. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

There are three grounds of rejection to be reviewed on appeal:

(1) Whether claims 17 and 19-24 are unpatentable for lack of adequate written description under 35 U.S.C. § 112, first paragraph;

(2) Whether claims 1-6, 8-13, 17, 19-24, and 33 are anticipated under 35 U.S.C. § 102(e) by Matsushita;

(3) Whether claims 7, 12, and 14 are unpatentable under 35 U.S.C. § 103(a) over Matsushita; and

(4) Whether claims 1-17, 19-24, and 33 are unpatentable 35 U.S.C. § 103(a) over Dams in view of Milbert.

**II. ARGUMENTS**

The rejections against all of the pending claims under consideration in the above-captioned patent application should be reversed for the reasons set forth below.

**A. Rejection under 35 U.S.C. § 112, first paragraph**

The Examiner has rejected claims 17 and 19-24 under 35 U.S.C. § 112, first paragraph as allegedly containing new matter. In particular, the Examiner alleges that Appellants identification of support for the instant claims does not provide full support for “(i) the formula of the organopolysiloxane and (ii) the range of peroxide, respectively, of claim 17.” Office Action of July 15, 2004, page 2. Each of these issues is discussed separately below.

**1. The claimed peroxide range is adequately supported**

With respect to the range of peroxide recited in the present claims, the Examiner correctly admits on the record that Examples 1 and 2 provide support for at least two data points within the disclosed range. Examiner’s Answer mailed December 19, 2005, page 3, line 15. Despite this admission on the record, the Examiner alleges that the “full support of the entire range of peroxide is not found ‘at least in Examples 1 and 2.’” Further, in response to Appellant’s arguments detailing the support in Examples 1 and 2 for using a peroxide based curing agent within the recited range, the Examiner alleges that because the specification does not expressly provide for a range with an end point of 5 weight parts, the recited range of “0.1 to 5 weight parts” is new matter.

First, the Examiner’s conclusion appears to be based on a misapprehension of the facts. In particular, the Examiner appears to misapprehend the embodiment on page 2, lines 19-28 of the specification. As noted in Appellant’s Appeal Brief, the specification discloses a peroxide range of “from about 0.1% to about 5% by weight”. Appeal Brief,

page 9. As the embodiment on page 2 describes the composition in terms of percentages, the total weight parts of the embodiment equals 100. Since the total of weight parts is 100, the range recited in claim 17, "0.1 to 5 weight parts," (which is based on the total composition) corresponds to the range disclosed in the specification, "from about 0.1% to about 5% by weight of *the total composition*." [emphasis added]. Even in claim 17, where the range of total weight parts has a lower limit of 110.2 and an upper limit of 406, the claimed range of "0.1 to 5 weight parts" is equivalent to the range of 0.091% (or approximately 0.1 %) and 1.23% by weight of the total composition. This is within the scope of the broader range "from about 0.1% to about 5%" supported by the specification. This is erroneous on the facts and as such it constitutes clear error.

Secondly, the Examiner's conclusion also appears to misapprehend the requirements of 35 U.S.C. 112, ¶ 1, with respect to the recitation of end points for claimed ranges. On this point, the following excerpt from MPEP § 2163.05(III) addressing the issue of range limitation is particularly instructive:

In the decision in *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), the ranges described in the original specification included a range of "25%-60%" and specific examples of "36%" and "50%." A corresponding new claim limitation to "at least 35%" did not meet the description requirement because the phrase "at least" had no upper limit and caused the claim to read literally on embodiments outside the "25% to 60%" range, however a limitation to "between 35% and 60%" did meet the description requirement.<sup>1</sup>

---

<sup>1</sup> See also, *Union Oil of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 997, 54 USPQ2d 1227, 1232-33 (Fed. Cir. 2000) (Description in terms of ranges of chemical properties which work in combination with  
(continued...)

Thus, the specification in *In re Wertheim* provided adequate support for a claim reciting the range "between 35% and 60%" where the specification disclosed a broader range (*i.e.*, between 25% and 60%) and where the specific examples set forth two data points within the disclosed range (*i.e.*, 36% and 50%). Here, as even the Examiner admits, the specification supports two data points (0.4% and 0.5% in Examples 1 and 2, respectively) within this claimed range. In view of the Examiner's admissions on the record, even if the specific claimed range had not been disclosed, the specification would still support that claimed range.

In view of the disclosure of the ranges and specific data points in the specification, Appellants respectfully submit that the peroxide range recited in the claims is adequately supported by the specification.

2. The formula of the organopolysiloxane is adequately supported

Contrary to the assertion in the Examiner's Answer, Appellants have identified support for the organopolysiloxane formula recited in claim 17, namely  $R_aSiO_{(4-a)/2}$  in which R is selected from substituted and unsubstituted monovalent hydrocarbon groups and *a* has a value of 1.95 to 2.05.

---

ranges of other chemical properties to produce an automotive gasoline that reduces emissions was found to provide an adequate written description even though the exact chemical components of each combination were not disclosed and the specification did not disclose any distinct embodiments corresponding to any claim at issue. "[T]he Patent Act and this court's case law require only sufficient description to show one of skill in the . . . art that the inventor possessed the claimed invention at the time of filing.").

The Examiner has previously admitted on the record that Example 1 supports at least a single value for  $a$  in the recited formula  $R_aSiO_{(4-a)/2}$ . Further, the Examiner has admitted on the record that the original disclosure supports a value of  $a$  that is in the range of 2.002~2.0001, where, according to the Examiner's own calculations, the degrees of polymerization factor  $n$  is converted to  $a$ . Additionally, the Examiner admits on the record that Example 1 provides support for at least a single species of the hydrocarbon and alkenyl group recited in claim 17.

Despite these record admissions, however, the Examiner appears to merely repeat the rejection from previous Office Actions and disregards the support identified by Appellants. The Examiner's Answer does not even address the arguments of Appellants on pages 10-12 of the Appeal Brief. For instance, the Examiner's Answer disregards the fact that there is a sufficient description of a representative number of species in the Specification. See Appeal Brief, page 11. Moreover, the Examiner disregards the fact that these examples correspond to the examples for the same formula in the Matsushita reference. See Appeal Brief, pages 11-12.

Further, contrary to the Examiner's previous allegations that the specification does not provide adequate support for the terms "hydrocarbon" and "alkenyl groups", these terms are disclosed in the specification, for example, at page 5, line 26, which provides: "[i]llustrative examples of such alkenyl groups are vinyl, allyl, or propynyl." Further, additional support for the term hydrocarbons is found, for example, at page 4

in the context of formula I, where the substituent groups disclosed in the specification are sufficiently representative of "hydrocarbons."

In view of at least the foregoing, the specification provides sufficient support to inform a person skilled in the art that Appellants were in possession of the formula recited in claim 17.

**B. Rejection under 35 U.S.C. § 102(e) over Matsushita**

1. Claims 1-6, 8-13, 17, 19-24, and 33

In the final Office Action mailed December 1, 2004, (the "Final Office Action") the Examiner rejected claims 1-6, 8-13, 17, 19-24, and 33 under 35 U.S.C. § 102(e) as allegedly being anticipated by Matsushita. As previously noted, Appellants submitted a Request for an Interference Pursuant to 37 C.F.R. § 1.607 accompanied by an affidavit antedating Matsushita as a reference, in accordance with 37 C.F.R. § 1.608. The interference request has not yet been considered by the Patent Office. A Second Request for an Interference Pursuant to 37 C.F.R. § 1.607 was also submitted with Appellants' previous response consistent with the previously presented claim amendments. This interference request has also not yet been considered. Although Appellants urge otherwise, the Examiner currently indicates she will not consider Appellants' Request for an Interference until all other issues relating to patentability of this invention have been resolved. When Appellants' Requests are considered, the Rule 608 affidavit will remove Matsushita as a reference.

For at least these reasons, Appellants respectfully submit that the Examiner's rejection of claims 1-6, 8-13, 17, 19-24, and 33 as being anticipated by Matsushita, are improper and respectfully request reversal of this rejection, and allowance of the pending claims.

**C. Rejection under 35 U.S.C. § 103(a) over Matsushita**

1. Claims 7, 12, and 14

The Examiner also rejected claims 7, 12, and 14 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Matsushita. As discussed above and in Appellants' previous response, Appellants respectfully traverse the rejection because Matsushita is not a proper reference and should be removed upon the Patent Office's consideration of Appellants' Requests for an Interference and Rule 608 affidavit. For at least these reasons, Appellants respectfully submit that the Examiner's rejection of claims 7, 12, and 14 as being unpatentable over Matsushita, is improper and respectfully request reversal of this rejection, and allowance of the pending claims.

**D. Rejection under 35 U.S.C. § 103(a) over Dams in view of Milbert**

1. Claims 1-17, 19-24, and 33

The Examiner rejected claims 1-17, 19-24, and 33 under 35 U.S.C. § 103(a) as being unpatentable over Dams in view of Milbert. Appellants respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness. To establish a *prima*

*facie* case of obviousness, three criteria must be met: (1) there must be some suggestion or motivation to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all the claim limitations. See *In Re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991); *In re Royka*, 490 F.2d 1981 (CCPA 1974). The Examiner has failed to establish any of the criteria for a *prima facie* case of obviousness.

First, Appellants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness because the cited references do not teach or suggest all of the claim limitations—that is, the references do not teach all elements of the claimed composition within the recited ranges of the claims. See MPEP § § 2143 and 2143.03. More specifically, Appellants submit that the references are deficient for at least failing to disclose the claimed range of the coupling agent (e.g., from about 0.01% to about 1% by weight of the total composition of a coupling agent), as recited in claims 1 and 17. That is, Dams is deficient in failing to disclose the claim ranges of the coupling agent and Milbert teaches ranges of a coupling agent in excess of what is presently claimed. See Response to Office Action of July 15, 2004, filed October 15, 2004, page 16.

The Examiner has alleged that the claimed ranges are result effective variables and can be optimized through routine experimentation. In order to be considered a result effective variable, however, a particular parameter must first be recognized as such by the prior art. See MPEP § 2144.05, citing *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to

contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable). In the instant case, the presently claimed silicone rubber composition was developed out of the need for silicone compositions that possess good processability properties during insulator fabrication processes. More specifically, the desired physical properties of the present silicone compositions are, for example, Tear B resistance and Shore A hardness. Specification, pages 8-9. These desired physical properties are not the subject of the Dams and Milbert references, which teach silicone rubber with improved color retention or elastomers with fire resistant properties, respectively. Imahashi is also concerned with fire resistant properties. Thus, because the references do not recognize the claimed ranges as parameters for the desired physical properties of the claimed compositions, the ranges are not result-effective variables as alleged by the Examiner, and thus the references do not teach all limitations of the claims.

Further on this point, the Examiner appears to argue that while courts have held that “the discovery of the optimum value of the parameter is not obvious,” Appellants have not provided any evidence to show that the entire range of the coupling agent provides optimum property to the claims silicone composition,” and that “even if Appellants’ few limited working examples provided superior Shore A hardness of about 70, such showing is not commensurate with the scope of the claims.” Examiner’s Answer mailed December 19, 2004, page 13. This discussion, however, is inapposite in

establishing a *prima facie* case of obviousness. Instead, the Examiner appears to be impermissibly setting forth arguments for a scope of enablement rejection. As concluded above, the Examiner has failed to establish the presence of a result-effective variable, which forces the conclusion that the cited references that the Examiner relies upon under a 35 U.S.C. § 103(a) analysis do not teach all limitations of the claims

Further, even assuming, *arguendo*, that the ranges are result-effective variable, the Examiner has failed to establish a *prima facie* case of obviousness because there is no suggestion or motivation to combine the references. Appellants have previously submitted that the references are directed to entirely different purposes—Dams to silicone rubber with improved color retention when exposed to corona discharge, and Milbert to a fire resistant elastomer; and that Dams and Milbert are not properly combinable because there is no suggestion or motivation in the prior art for a person of ordinary skill in the art to combine the teachings of the references.

In response to these arguments, the Examiner alleges “Milbert and Dams are analogous because they are both from the same area of endeavor of silicone composition for insulating electrical conductors and silicone compositions, and good mechanical properties and fire resistance should be sought after by Milbert and Dams.” Examiner’s Answer, mailed December 19, 2005, page 11. The Examiner does not seem to allege any motivation or cite any evidence in support thereof. Thus, it would appear that the Examiner merely alleges that the references are combinable because the references are analogous in that they both teach silicone compositions being used as

insulating material. Office Action mailed December 1, 2004, page 4. Even if the references are analogous, however, that alone does not render the references properly combinable. "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984). There would appear to be no motivation for one to combine the teachings of a reference directed to improved color stability with a reference for a fire resistant elastomer, and the Examiner has not alleged as such. Therefore, a person skilled in the art would not be motivated to modify the compositions of either reference to incorporate components of the other.

Moreover, given the unpredictability of the technology there can be no reasonable expectation of success where one merely picks and chooses from the multitude of possibilities and combinations. The Federal Circuit has held that an invention is merely "obvious to try" if prior art gives either no indication of which parameters are critical or no direction as to which of many possible choices is likely to be successful. *Merck & Co., Inc. v. Biocraft Laboratories, Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989), and that such an "obvious to try" situation is not sufficient basis for rejecting a claim under Section 103. It is clear from the above analysis that, at most, the Examiner has concluded that the present invention would have been "obvious to try."

Finally, Appellants submit that even if a *prima facie* case of obviousness could be established, it would be rebutted by the unexpected results achieved by the claimed

invention. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). In particular, Appellants provide in the specification: "The compositions disclosed in this invention provide silicone rubber compositions, which upon heat curing are converted to rubbery elastomers superior in high voltage electrical insulating characteristics such as resistance to weather, erosion, tracking and arc under severe contamination or weather conditions." Specification, p. 5, ll. 9-13. Table I of the Specification provide the physical properties of an exemplary embodiment of the claimed invention. Specification, p. 13, tbl. I. In comparison, Tables I, III, IV and V of Milbert show the physical properties for the compositions disclosed therein. Milbert, col. 6, ll. 25-35 (tbl. I), col. 7, ll. 10-25 (tbl. III), col. 8, ll. 35-48 (tbl. IV), col. 10, ll. 9-23 (tbl. V). A comparison of the values from the tables shows that composition claimed in the pending application achieves a Shore A Hardness of 70 as compared to the composition of the prior art which achieves considerably lower values. Moreover, the Specification points out that "at higher silane coupling agent concentrations (VTES), and higher ATH loading the product showed increased times to failure in tracking and erosion testing." Specification, p. 13, l. 22 - p. 14, l. 2, p. 14, tbl. II.

It would appear that the Examiner has failed to consider this evidence of unexpected results, stating instead, that the Appellant "must show criticality and unexpected results over the primary reference Dams." Examiner's Answer mailed December 19, 2005, page 13. The mandate provided by both the Patent Office and the Court of Appeals for the Federal Circuit is that the Office in assessing nonobviousness

must consider evidence of unexpected effects. See, *e.g.*, *In re Soni*, 34 USPQ 2d 1684, 1687 (Fed. Cir. 1995) (“the PTO must consider comparative data in the specification in determining whether the claimed invention provides unexpected results”); see also MPEP 716.02(c)(holding the same).


Here, as in *Soni*, the present specification contains more than mere argument or conclusory statements; it contains specific data indicating unexpected properties. As the Federal Circuit held in *Soni*, “when an applicant demonstrates substantially improved results as *Soni* did here, and states that the results were unexpected, this should suffice to establish unexpected results in the absence of evidence to the contrary.” *Soni* at 1688 (emphases added). The Examiner points to no evidence that contradicts the unexpected results discovered by Applicant and illustrated in, *e.g.*, Table I.

Therefore, for at least the foregoing reasons, Appellants respectfully submit that claims 1-17, 19-24, and 33 are not unpatentable over Dams in view of Milbert. For at least these reasons, Appellants respectfully submit that the Examiner’s rejection of claims 1-17, 19-24, and 33 is improper and respectfully request reversal of this rejection, and allowance of the pending claims.

III. CONCLUSION

In conclusion, the multiplicity of factual errors set forth by the Examiner has significantly compromised the legal conclusions set forth by the Patent Office. Further, even divorced from the factual errors, the legal analysis has likewise been fraught with error. For the reasons set forth above, the Board is respectfully requested to reverse the Examiner's rejections with respect to claims 1-17, 19-24, and 33.

Respectfully submitted,  
HUNTON & WILLIAMS

By:   
Robert M. Schulman  
Reg. No. 31,196

Scott F. Yarnell,  
Reg. No. 45,245

Dated: February 21, 2006

Hunton & Williams  
1900 K Street, N.W., Suite 1200  
Washington, D.C. 20006-1109  
Telephone (202) 955-1500  
Facsimile (202) 778-2201